

### A B S T R A C T

The present invention is based on the surprising finding that adenosine A3 receptor agonists (A3RAg) are capable of activating natural killer (NK) cells. In particular, methods and pharmaceutical compositions for activating NK cells in an individual comprising administering said individual with an effective amount of one or more A3RAg are provided herein.

A further method includes treatment of a disease comprising administering to an individual in need of such treatment NK cells *a priori* activated with an effective amount of at least one A3RAg. The NK cells may be either autologous cells or cells withdrawn from a donor individual.

Further provided are pharmaceutical compositions comprising one or more A3RAg in an amount effective to achieve a therapeutic effect, the therapeutic effect comprising activation of NK cells, the pharmaceutical composition optionally comprising physiologically acceptable additives.